AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1.   (previously presented): An apparatus for transmitting multimedia broadcasting, comprising:

a reference clock generator/transmitter, which generates and transmits a reference clock value, which is a current time value of real-time multimedia broadcasting at the transmission and reception locations;

a multimedia document generator/transmitter, which generates and transmits a multimedia document scheduled at the generated reference clock value; and

a media data generator/transmitter, which generates and transmits media data used to render the generated multimedia document;

wherein the multimedia document is a synchronized multimedia integration language (SMIL) document.

2.   (canceled).

3.   (original): The apparatus of claim 1, wherein the reference clock generator/transmitter, the multimedia document generator/transmitter, and the media data generator/transmitter transmit the reference clock value, the multimedia document, and the media data, respectively, in the form of a predetermined data stream.

4. (original): The apparatus of claim 3, wherein the predetermined data stream is composed of type information, time slot information, payload length information, and payload information, the type information indicates whether the predetermined data stream is for the reference clock value, the multimedia document, or the media data, the time slot information indicates a broadcasting time zone in which the reference clock value, the multimedia document, or the media data is scheduled, the payload length information indicates the length of the payload information, and the payload information is substantial data information of the reference clock value, the multimedia document, or the media data.

5. (original): The apparatus of claim 1, wherein the reference clock generator/transmitter transmits the reference clock value, which increases by a predetermined value, whenever the reference clock value increases by the predetermined value.

6. (previously presented): An apparatus for receiving multimedia broadcasting, comprising:

 a reference clock receiver, which receives a reference clock value, which is a current time value of real-time multimedia broadcasting at the transmission and reception locations;

 a multimedia document receiver/storage, which receives and stores a first multimedia document;

 a media data receiver/storage, which receives and stores first media data; and

a multimedia document renderer, which when the first multimedia document is scheduled at the reference clock value and the first media data is a rendering material, used to render the first multimedia document, renders the first multimedia document using the first media data;

wherein the multimedia document is a synchronized multimedia integration language (SMIL) document.

7.   (canceled).

8.   (original): The apparatus of claim 6, wherein the reference clock receiver, the multimedia document receiver/storage, and the media data receiver/storage receive the reference clock value, the first multimedia document, and the first media data, respectively, in the form of a predetermined data stream.

9.   (original): The apparatus of claim 8, wherein the predetermined data stream is composed of type information, time slot information, payload length information, and payload information, the type information indicates whether the predetermined data stream is for the reference clock value, the multimedia document, or the media data, the time slot information indicates a broadcasting time zone in which the reference clock value, the multimedia document, or the media data is scheduled, the payload length information indicates the length of the payload information, and the payload information is substantial data information of the reference clock value, the multimedia document, or the media data.

10.   (original): The apparatus of claim 6, wherein the reference clock receiver receives the reference clock value, which increases by a predetermined value, whenever the reference clock value increases by the predetermined value.

11.   (original): The apparatus of claim 10, wherein when the first multimedia document is not scheduled at the reference clock value, the multimedia document renderer stands by until receipt of a predetermined reference clock value at which the first multimedia document is scheduled.

12.   (original): The apparatus of claim 10, wherein when the first multimedia document is scheduled at the reference clock value but the first media data is not a rendering material used to render the first multimedia document, the multimedia document renderer holds the first media data in standby and then uses the first media data when rendering a second multimedia document, whose rendering material is the first media data and which is scheduled at a predetermined reference clock value.

13.   (original): The apparatus of claim 10, wherein when the first multimedia document under rendering is not scheduled at a predetermined increasing reference clock value, the multimedia document renderer stops rendering the first multimedia document and then renders a second multimedia document scheduled at the predetermined increasing reference clock value when the

second multimedia document and second media data, which is a rendering material for the second multimedia document, have been stored.

14.   (original): The apparatus of claim 10, wherein when the first multimedia document under rendering is not scheduled at a predetermined increasing reference clock value, the multimedia document renderer stops rendering the first multimedia document and then receives and stores a second multimedia document scheduled at the predetermined increasing reference clock value when the second multimedia document has not been stored.

15.   (original): The apparatus of claim 10, wherein when the first multimedia document under rendering is not scheduled at a predetermined increasing reference clock value, the multimedia document renderer stops rendering the first multimedia document and then receives and stores second media data used to render a second multimedia document scheduled at the predetermined increasing reference clock value when the second multimedia document has been stored but the second media data has not been stored.

16.   (previously presented): A multimedia broadcasting system comprising:

    an apparatus for transmitting multimedia broadcasting, which generates and transmits a reference clock value, which is a current time value of real-time multimedia broadcasting at the transmission and reception locations, a multimedia document scheduled at the generated

reference clock value, and media data, which is a rendering material used to render the generated

multimedia document; and

an apparatus for receiving multimedia broadcasting, which receives the reference clock

value, receives and stores the multimedia document and the media data, and when the

multimedia document is scheduled at the reference clock value and the media data is a rendering

material used to render the multimedia document, renders the multimedia document using the

media data;

wherein the multimedia document is a synchronized multimedia integration language

(SMIL) document.

17.   (previously presented): A method of transmitting multimedia broadcasting, comprising:

generating and transmitting a reference clock value, which is a current time value of real-

time multimedia broadcasting at the transmission and reception locations;

generating and transmitting a multimedia document scheduled at the generated reference

clock value; and

generating and transmitting media data, which is a rendering material for the generated

multimedia document;

wherein the generating of the reference clock value, the multimedia document, and the

media data, respectively, are carried out by at least one processor; and

wherein the multimedia document is a synchronized multimedia integration language

(SMIL) document.

18.   (canceled).

19.   (original): The method of claim 17, wherein the reference clock value, the multimedia

document, and the media data are transmitted in the form of a predetermined data stream.

20.   (original): The method of claim 19, wherein the predetermined data stream is composed

of type information, time slot information, payload length information, and payload information,

the type information indicates whether the predetermined data stream is for the reference clock

value, the multimedia document, or the media data, the time slot information indicates a

broadcasting time zone in which the reference clock value, the multimedia document, or the

media data is scheduled, the payload length information indicates the length of the payload

information, and the payload information is substantial data information of the reference clock

value, the multimedia document, or the media data.

21.   (original): The method of claim 17, wherein the reference clock value is transmitted

whenever the reference clock value increases by a predetermine value.

22.   (previously presented): A method of receiving multimedia broadcasting, comprising:

        receiving a reference clock value, which is a current time value of real-time multimedia

broadcasting at the transmission and reception locations;

receiving and storing a first multimedia document;

receiving and storing first media data; and

when the first multimedia document is scheduled at the reference clock value and the first

media data is a rendering material used to render the first multimedia document, rendering the

first multimedia document using the first media data;

wherein the first multimedia document is rendered by using a processor; and

wherein the multimedia document is a synchronized multimedia integration language

(SMIL) document.

23.   (canceled).

24.   (original): The method of claim 22, wherein the reference clock value, the first

multimedia document, and the first media data are received in the form of a predetermined data

stream.

25.   (original): The method of claim 24, wherein the predetermined data stream is composed

of type information, time slot information, payload length information, and payload information,

the type information indicates whether the predetermined data stream is for the reference clock

value, the multimedia document, or the media data, the time slot information indicates a

broadcasting time zone in which the reference clock value, the multimedia document, or the

media data is scheduled, the payload length information indicates the length of the payload

information, and the payload information is substantial data information of the reference clock

value, the multimedia document, or the media data.

26.   (original): The method of claim 22, wherein the reference clock value is received

whenever the reference clock value increases by a predetermined value.

27.   (original): The method of claim 26, wherein when the first multimedia document is not

scheduled at the reference clock value, rendering the first multimedia document comprises

standing by until receipt of a predetermined reference clock value at which the first multimedia

document is scheduled.

28.   (original): The method of claim 26, wherein when the first multimedia document is

scheduled at the reference clock value but the first media data is not a rendering material for the

first multimedia document, rendering the first multimedia document comprises holding the first

media data in standby and then using the first media data when rendering a second multimedia

document, whose rendering material is the first media data and which is scheduled at a

predetermined reference clock value.

29.   (original): The method of claim 26, wherein when the first multimedia document under

rendering is not scheduled at a predetermined increasing reference clock value, rendering the

first multimedia document comprises stopping rendering the first multimedia document and then

rendering a second multimedia document scheduled at the predetermined increasing reference clock value when the second multimedia document and second media data used to render the second multimedia document, have been stored.

30.   (original): The method of claim 26, wherein when the first multimedia document under rendering is not scheduled at a predetermined increasing reference clock value, rendering the first multimedia document comprises stopping rendering the first multimedia document and then receiving and storing a second multimedia document scheduled at the predetermined increasing reference clock value when the second multimedia document has not been stored.

31.   (original): The method of claim 26, wherein when the first multimedia document under rendering is not scheduled at a predetermined increasing reference clock value, rendering the first multimedia document comprises stopping rendering the first multimedia document and then receiving and storing second media data, which is a rendering material used to render a second multimedia document scheduled at the predetermined increasing reference clock value, when the second multimedia document has been stored but the second media data has not been stored.

32.   (previously presented): A multimedia broadcasting method comprising:

generating and transmitting a reference clock value, which is a current time value of real-time multimedia broadcasting at the transmission and reception locations, a multimedia

document scheduled at the generated reference clock value, and media data, which is a rendering

material used to render the generated multimedia document; and

receiving the reference clock value, receiving and storing the multimedia document and

the media data, and when the multimedia document is scheduled at the reference clock value and

the media data is a rendering material used to render the multimedia document, rendering the

multimedia document using the media data

wherein the generating of the reference clock value, the multimedia document, and the

media data, respectively, are carried out by at least one processor; and

wherein the multimedia document is a synchronized multimedia integration language

(SMIL) document.

33.   (previously presented): A computer readable medium having encoded thereon a data

structure for causing a processor to perform multimedia broadcasting, the data structure

comprising:

type information, which indicates whether substantial data is a reference clock value,

which is a current time value of real-time multimedia broadcasting at the transmission and

reception locations, a multimedia document scheduled at the generated reference clock value, or

media data, which is a rendering material used to render the generated multimedia document;

time slot information, which indicates a broadcasting time zone in which the reference

clock value, the multimedia document, or the media data is scheduled;

payload length information, which indicates the length of payload information following

the payload length information; and

payload information, which is substantial data information of the reference clock value,

the multimedia document, or the media data;

wherein the multimedia document is a synchronized multimedia integration language

(SMIL) document.

34.   (original): The data structure of claim 33, wherein the type information, the time slot

information, the payload length information, and the payload information are sequentially

arranged.

35.   (currently amended): A computer-readable recording medium in which a program for

executing the method of any one of claims 17, 19-22, and 24 through 32 in a computer is

recorded.

36.   (previously presented): The apparatus of claim 1, wherein the media data

generator/transmitter generates and transmits media data separately from the generated

multimedia document.

37.   (previously presented): The apparatus of claim 6, wherein the media data receiver/storage

receives and stores first media data separately from the multimedia document.